South Valley Agrichemical Water Quality Impact Study

and

Surface Water Monitoring Results for Acequias Located within Bernalillo County, 2005

Prepared For:

BERNALILLO COUNTY BOARD OF COMMISSIONERS

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Executive Summary

This report documents results of surface water and groundwater monitoring conducted during 2001 to 2005 in the South Valley area of Bernalillo County, NM. The agricultural chemical (agrichemical) water quality impact study is based on samples collected from a monitoring network of a forty-five surface water and shallow groundwater sampling locations located in the South Valley exclusive of acequias samples collected by others. The sampling locations are located in three transects. The transects include surface water sites at the inlets to canals and drains near the Rio Grande in the north part of the South Valley, and surface water and adjacent monitoring well locations in transects along Rio Bravo Blvd. and along Malpais Rd. The sampling locations are within or adjacent to irrigation canals and drains in the South Valley on Middle Rio Grande Conservancy District (MRGCD) property. Water samples were collected during the period of 2001 to 2005 and analyzed for a constituent list useful for detecting and characterizing agricultural chemical water quality impacts.

The samples collected for this study are representative only of the surface water and groundwater affected by surface-water interaction along the irrigation drainages and canals and may not be representative of groundwater conditions in outlying areas. Other areas of groundwater contamination are known to exist within the South Valley area. This study was not designed or intended to address groundwater contamination issues within those known areas. Within the stated limitations, the findings of this report indicate that the irrigation water, drainage water, and immediately adjacent shallow groundwater in the South Valley do not typically contain detectable levels of herbicides or pesticides or other organic compounds or exhibit significantly elevated levels of inorganic contaminants.

To date, the analytical results from surface water samples and samples from the monitoring wells have yielded no detections of any pesticides, herbicides, or other organic compounds indicative of agrichemicals. Any elevated levels of inorganic constituents, such as nitrates, are readily attributable to other sources, and elevated measurements of fecal coliform found in other overlapping studies are attributable to multiple sources present within the study area as well as to livestock operations.

A companion study, *Surface Water Monitoring Results for Acequias Located within Bernalillo County, 2005,* is described in Section 1.3 and Appendix A. The study was conducted as a collaborative project between the Bernalillo County of Environmental Health, New Mexico Environment Department (NMED), Surface Water Quality Bureau, and the South Valley Partners for Environmental Justice. Sampling was done at eight sites selected by community organizers who were knowledgeable with previous illegal dumping near the acequias. Results of the study indicated that *E. Coli* concentrations in three of the eight sites (i.e., the San Jose Drain site, the Los Padillas Drain site, and the Albuquerque Riverside Drain site) exceed New Mexico Administrative Code standards for at least part of the year. The San Jose Drain site also exceeded the standard for dissolved mercury in the fall. There were no exceedances of semivolatile organic compounds water quality standards, although soil samples from the Sand Jose Drain site did exceed the reference dose (RfD) for three semivolatile organic compounds, but did not exceed health based screening standards.

Based on the findings of the *Agrichemical Water-Quality Impact Study* and of *Surface Water Monitoring Results for Acequias Located within Bernalillo County, 2005*, the following recommendations are proffered:

- Discontinue routine water quality monitoring of the surface water and monitoring wells.

- Focus any agrichemical studies on shallow groundwater beneath agricultural fields and collect samples from nearby domestic wells rather than adjacent to canals, drains, and ensure adequate data are collected regarding timing and rate of chemical application.

- Do not expand the program to the North Valley without an initial reconnaissance of surface water to determine if such a program is warranted due to the presence of contaminants.

With respect to status and disposition of the existing wells and surface locations:

- Extend the MRGCD license and retain a portion the wells for water level monitoring transects in conjunction with on-going USGS studies, particularly along Rio Bravo Blvd..

- Determine whether the Barr Drain surface location and related shallow groundwater monitoring wells are applicable locations for monitoring of stormwater quality runoff of surface water discharges. If so, modify the program to address stormwater quality parameters and flow rate monitoring as allowed by the MRGCD license agreements for those locations. Monitoring at the San Jose Drain site, the Los Padillas Drain site, and the Albuquerque Drain site should also be evaluated for applicability of continued monitoring.

- For retained locations, establish elevations to within 0.01 feet at wellheads and monitor elevation changes in canals and drains and related responses in the adjacent wells. Install pressure transducers in the wells, and if feasible establish stage recorders in the adjacent canals and drains.

- Identify County projects that may benefit from retention of wells in other locations such as future locations of detention or storm surge ponds, establish elevations at wells heads, and continue to monitor water levels at those locations.

- For the remainder of the wells, plug and abandon the locations per MRGCD license agreements.